Dart Aerospace Ltd.

Date: Thursday, 5/3/2007 11:28:44 AM
User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: 350/355 AS X-TUBE AFT ~~UNDER REVIEW~~
Job Number	: 32161		
Estimate Number	: 12486		
P.O. Number	:	Part Number	: D350748201
This Issue	: 5/3/2007 S.O. No. :	Drawing Number	: N/A ~~UNDER REVIEW~~ QC 07.05.10
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: N/A Type : LANDING GEAR	Drawing Revision	: N/A
Previous Run	: 32160	Material	: N/A
Written By	:	Due Date	: 6/10/2007 Qty: 1 Um: Each
Checked & Approved By	: 07.05.03		
Comment	: Est Rev: A New Issue 06-07-05 JLM Est Rev: B Update qty of MS21042L5 06-09-12 KJ		

Additional Product

Job Number:

Seq. #:	Machine Or Operation:	Description :
1.0	DC	DOCUMENT CONTROL
	Comment: Photocopy bluefile & type labels per PPPD350-748-201 CHG001	KJ 07.05.31
2.0	32161A	X-TUBE AS 350/355 HI AFT UNDER REVIEW
	Comment: Sub-Component X-TUBE AS 350/355 HI AFT D350-748-241 B 32161A	KS 07/11/14
3.0	PACKAGING 1	PACKAGING RESOURCE #1
	Comment: PACKAGING RESOURCE #1 Pick Packing Kit	
4.0	D35001	350 SADDLE
	Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s) 350 SADDLE Batch: 31076	SC
5.0	D35011	BUSHING
	Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s) BUSHING Batch: B28478 (9) B31077	7-11-14 SC

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ PAR #: _______ Fault Category: __________________ NCR: Yes No DQA: _____ Date: _________

QA: N/C Closed: _____ Date: _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 5/3/2007 11:28:44 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** 350/355 AS X-TUBE AFT UNDER REVIEW

Job Number: 32161 **Part Number:** D350748201

Job Number:

Seq. #:	Machine Or Operation:	Description :
6.0	AN46A	Bolt
	Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s) Bolt Batch: M104322	SØ
7.0	AN441A	bolt
	Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s) bolt Batch: M102552	SØ
8.0	AN532A	Bolt
	Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s) Bolt Batch: M104679	SØ
9.0	AN960JD416	Washer
	Comment: Qty.: 32.0000 Each(s)/Unit Total : 32.0000 Each(s) Washer Batch: M105426	SØ
10.0	AN960JD516	Washer
	Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s) Washer Batch: M104156	SØ
11.0	MS21042L4	Nut
	Comment: Qty.: 24.0000 Each(s)/Unit Total : 24.0000 Each(s) Nut Batch: M105054	SØ
12.0	MS21042L5	Nut
	Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s) Nut Batch: M105430	7/11/14 SØ

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________ **PAR #:** ______ **Fault Category:** ____________ **NCR:** Yes $\boxed{\text{No}}$ **DQA:** D **Date:** 09/11/15

QA: N/C Closed: _____ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 5/3/2007 11:28:44 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services
Drawing Name: 350/355 AS X-TUBE AFT UNDER REVIEW

Job Number: 32161
Part Number: D350748201

Job Number:

Seq. #:	Machine Or Operation:	Description :
13.0	QC4	INSPECT 100% KITS FOR COMPLETENESS

Comment: INSPECT 100% KITS FOR COMPLETENESS

Seq. #:	Machine Or Operation:	Description :
14.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Identify and pack for shipping as per PPP D350-748-201
Location: PPP
PPP Rev: A

AS 07/11/14

Seq. #:	Machine Or Operation:	Description :
15.0	QC21	FINAL INSPECTION/W/O RELEASE

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion

Form: rprocess

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ______________ **PAR #:** _______ **Fault Category:** ______________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Dart Aerospace Ltd.

Date: Thursday, 5/3/2007 11:29:05 AM
User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	**Drawing Name**	: X-TUBE AS 350/355 HI AFT ~~UNDER REVIEW~~
Job Number	: 32161A		
Estimate Number	: 12483		
P.O. Number	: N/A	**Part Number**	: D350748241
This Issue	: 5/3/2007 **S.O. No.** : N/A	**Drawing Number**	: D350-748-241 ~~U/R~~
Prsht Rev.	: NC	**Project Number**	: N/A
First Issue	: N/A **Type** : LANDING GEAR	**Drawing Revision**	: ~~C~~ D
Previous Run	: 32160A	**Material**	: N/A
Written By	:	**Due Date**	: 6/10/2007 **Qty:** 1 **Um:** Each
Checked & Approved By	: 07.05.03		
Comment	: Est Rev: A New Issue 06-07-05 JLM Est Rev: B Update cadplate process 06-09-12 KJ		

OK 07.05.11

Additional Product

Job Number:

Seq. #:	**Machine Or Operation:**	**Description :**
1.0	DC	DOCUMENT CONTROL

Comment: DOCUMENT CONTROL
Photocopy bluefile and create labels as per PPP D350-748-241 CHG001 N/A

2.0	D6018125	Crosstube Material

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
Crosstube Material
D6018-125
2.299" OD X 2.000" ID
Batch: B27742

SF 07/07/10

3.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE

Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs on both ends as per Folio FA647

2-Turn first side as per Folio FA647

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D350-748-241. SF 07/07/10

4.0	QC1	INSPECT ALL DIM TO DIM SHEET

Comment: INSPECT ALL DIM TO DIM SHEET BF 07.07.13

Form: rprocess

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ________________ **PAR #:** _______ **Fault Category:** ________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 5/3/2007 11:29:05 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services
Drawing Name: X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 32161A
Part Number: D350748241

Job Number:

Seq. #:	Machine Or Operation:	Description :
5.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE

Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA647

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D350-748-241.

3-Scribe part # as per Dwg D350-748-241 BG 07.07.13 (1)

Seq. #:	Machine Or Operation:	Description :
6.0	QC1	INSPECT ALL DIM TO DIM SHEET

Comment: INSPECT ALL DIM TO DIM SHEET BG 07-07-13 (1)

Seq. #:	Machine Or Operation:	Description :
7.0	QC8	SECOND CHECK

Comment: SECOND CHECK 07/07/13 (1)

Seq. #:	Machine Or Operation:	Description :
8.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1

Comment: LANDING GEAR RESOURCE 1
Remove all Machining Marks JD 7-7-24

Seq. #:	Machine Or Operation:	Description :
9.0	OUTSIDE SERV.10	OUTSIDE SERVICES -LG

Comment: Sub-Contracting OUTSIDE SERVICES
Issue P/O: 4289
Heat Treat to min 180 KSI As per Dwg D350-748-241
Sand Blast tube after Heat Treat
Possibe Supplier: Vac Aero
Ensure Certificate of Conformity is attached
JL 7-8-02

Seq. #:	Machine Or Operation:	Description :
10.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Receive & Inspect For Transit Damage
Ensure certificate of conformaty is attached 07/08/24 (1)

Seq. #:	Machine Or Operation:	Description :
11.0	QC6	DIMENSIONAL CHECK

09.10 (1)

POSITIVE RECALL

PC

Comment: DIMENSIONAL CHECK

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector
07-09-10	11.0						

Part No: ______ **PAR #:** ______ **Fault Category:** ______ **NCR:** Yes (No) **DQA:** D **Date:** 07/11/14

QA: N/C Closed: ______ **Date:** ______

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B **Initial** Chief Eng	**Action Description** Chief Eng	**Sign & Date**	**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
07-09-10	11.0	Tube appears to be more warped than usual from heat treating.	[signature] 051012	- Continue with process until Seq. 14.0 for inspection, under Positive Recall.	[signature]	[signature] 07-09-10	[signature] 051042	[signature] 07-09-10

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevD

Date: Thursday, 5/3/2007 11:29:05 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 32161A **Part Number:** D350748241

Job Number:

Seq. #:	Machine Or Operation:	Description :
12.0	HAND FINISHING1	HAND FINISHING RESOURCE #1

Comment: HAND FINISHING RESOURCE #1
Oil inside of tube with LPS-3 .

A/R LPS-3 Batch: M 10461 EL 7-9-13

Seq. #:	Machine Or Operation:	Description :
13.0	BENDING	BENDING MACHINE

Comment: BENDING MACHINE
Bend tube as per Dwg D350-748-241 using CNC bender program D350A and Folio FT_____ EL 7-9-13

Seq. #:	Machine Or Operation:	Description :
14.0	QC6	DIMENSIONAL CHECK

*See PTO @ 11.0 ... 709.19 (POSITIVE RECALL)

Comment: DIMENSIONAL CHECK

Seq. #:	Machine Or Operation:	Description :
15.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1

Comment: LANDING GEAR RESOURCE 1
1-Remove all marks from tube within limits of D350-748-241 - AWM 07/09/18

2-Drill Tube as per Dwg D350-748-241 Using DT8876 Drill Jigs, EL/SR 7-9-25
Set-up drill table as per QSI 010

3-Deburr EL

4-Engrave Part # and Batch # as per Dwg D350-748-241 EL 7-10-5

Seq. #:	Machine Or Operation:	Description :
16.0	QC6	DIMENSIONAL CHECK

~~See PTO @ 11.0~~

Comment: DIMENSIONAL CHECK Check holes for alignment ... 07/10/08

Seq. #:	Machine Or Operation:	Description :
17.0	OUTSIDE SERV.10	OUTSIDE SERVICES -LG

Comment: Sub-Contracting OUTSIDE SERVICES
Issue P/O: 4787 07/10/11
Stress relief at 375° for 5 hours
Magnetic Particle Inspect per ASTM E1444
Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2
Embrittle relief at 375° for 8 hours, Chromate Treat
Possibe Supplier: Southwest United Industries
Ensure Certificate of Conformity is attached

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevD

Date: Thursday, 5/3/2007 11:29:05 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services **Drawing Name:** X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 32161A **Part Number:** D350748241

Job Number:

Seq. #:	Machine Or Operation:	Description :
18.0	PACKAGING 1	PACKAGING RESOURCE #1
	Comment: PACKAGING RESOURCE #1 Receive & Inspect For Transit Damage Ensure certificate of conformity is attached	7/11/06 SP (1X)
19.0	QC5	INSPECT WORK TO CURRENT STEP
	Comment: INSPECT WORK TO CURRENT STEP	07/11/07
20.0	SPRAY PAINTING	SPRAY PAINTING
	Comment: SPRAY PAINTING 1-Prime inside crosstube as per QSI 005 4.2 2-Paint Outside of Tube as per Dart QSI 005 4.2	07 11 08 (1)
21.0	QC14	INSPECT SPRAY PAINT
	Comment: Inspect Spray Paint Then,Wrap in plastic bag to protect from scratches	07/11/09
22.0	D35021	SUPPORT
	Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s) SUPPORT Batch: 32205	07 11 13
23.0	D2856400	Abrasion Strip
	Comment: Qty.: 1.2401 f(s)/Unit Total : 1.2401 f(s) Abrasion Strip 7.10" long x2 Batch: 34642	07 11 13
24.0	ALS41032225	Insert
	Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s) Insert Batch: 100621	07 11 13

Form: rprocess

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 5/3/2007 11:29:05 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services
Drawing Name: X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 32161A
Part Number: D350748241

Job Number:

Seq. #:	Machine Or Operation:	Description :
25.0	AN960JD10	Washer

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
Washer
Batch: 105442 ml 07 11 13

Seq. #:	Machine Or Operation:	Description :
26.0	MS2192020	Clamp (per MIL-DTL-8783C)

Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Clamp (per MIL-DTL-8783C)
Batch: 102787 ml 07 11 13

Seq. #:	Machine Or Operation:	Description :
27.0	MS27039110	Screw

Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
Screw
Batch: 18836 ml 07 11 13

Seq. #:	Machine Or Operation:	Description :
28.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1

Comment: LANDING GEAR RESOURCE 1

1-Install Ground wire Insert,then insert screw and washer

2-Install Abraision strips as per Dwg D350-748-241 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-241,Torque to 60-80 IN-LBS

ml 07 11 13

Seq. #:	Machine Or Operation:	Description :
29.0	QC5	INSPECT WORK TO CURRENT STEP

07.11.13

Comment: INSPECT WORK TO CURRENT STEP

Seq. #:	Machine Or Operation:	Description :
30.0	PACKAGING 1	PACKAGING RESOURCE #1

Comment: PACKAGING RESOURCE #1
Identify and pack for shipping as per PPP D350-748-241
Location: PPP
PPP Rev: PPP 32161 7/11/14

POSITIVE RECALL
EFFECTIVE 1709-10 AUTH
RELEASED DATE 09-19-20

Form: mprocess

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ______ PAR #: ______ Fault Category: ______ NCR: Yes / (No) DQA: LD Date: 9/11/14

QA: N/C Closed: _____ Date: ______

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B — Initial Chief Eng	Corrective Action Section B — Action Description Chief Eng	Corrective Action Section B — Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector

NOTE: Date & initial all entries

Date: Thursday, 5/3/2007 11:29:05 AM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services
Drawing Name: X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 32161A
Part Number: D350748241

Job Number:

Seq. #:	Machine Or Operation:	Description :
31.0	QC21	FINAL INSPECTION/W/O RELEASE

Comment: FINAL INSPECTION/W/O RELEASE

7/11/14

Job Completion

Form: rprocess

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

QA: N/C Closed: _____ **Date:** _________

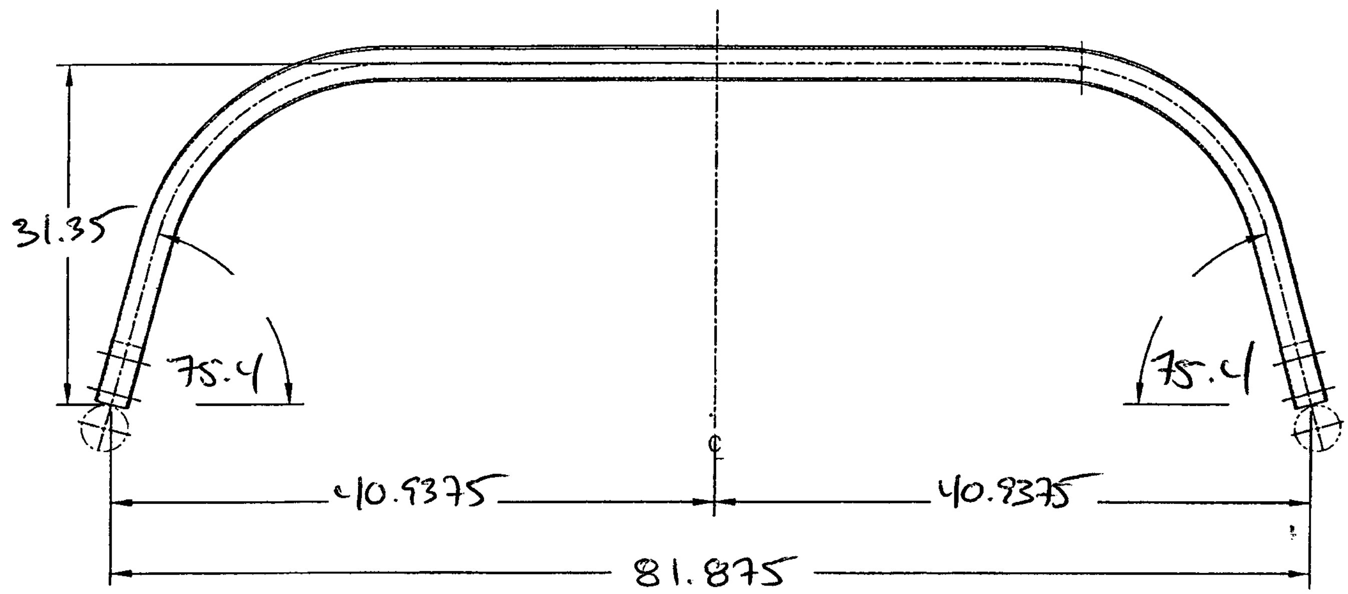
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

H:\fFORMS\Quality Assurance\approved QA\NCRWO RevD

DART AEROSPACE LTD	Work Order:	32161 A
Description: Crosstube High Aft (AS350/355)	**Part Number:**	**D350-748-201**
Inspection Dwg: D350-748-241 **Rev:** D		**Page 1 of 1**

Required Dimension	Min	Max
Height	31.22	31.48
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.54	82.06



Comments

QC15 Inspection	
Date	0709.19

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	

DART AEROSPACE LTD	Work Order:	
Description: Crosstube Assembly (AS350/355 High Aft)	**Part Number:**	**D350-748-241**
Inspection Dwg: D350-748-241 **Rev:** D		**Page 1 of 1**

FIRST ARTICLE INSPECTION CHECKLIST

[X] **First Article** [ ] **Prototype**

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.242	✓			
	2.180	+0.005/-0.000	2.183	✓			
	2.180	+0.005/-0.000	2.184	✓			
	2.208	+0.005/-0.000	2.211	✓			
	2.234	+0.005/-0.000	2.237	✓			
	2.253	+0.005/-0.000	2.257	✓			
	2.272	+0.005/-0.000	2.274	✓			
	2.299	+0.005/-0.000	2.304	✓			
	0.063	+/-0.010	.063	✓			
	4.26	+/-0.030	4.26	✓			
	R0.063	+/-0.010	.063	✓			
	R0.50	+/-0.030	.50	✓			
SIDE B	2.240	+0.005/-0.000	2.241	✓			
	2.180	+0.005/-0.000	2.182	✓			
	2.180	+0.005/-0.000	2.184	✓			
	2.208	+0.005/-0.000	2.211	✓			
	2.234	+0.005/-0.000	2.237	✓			
	2.253	+0.005/-0.000	2.256	✓			
	2.272	+0.005/-0.000	2.274	✓			
	2.299	+0.005/-0.000	2.304	✓			
	0.063	+/-0.010	.063	✓			
	4.26	+/-0.030	4.26	✓			
	R0.063	+/-0.010	.063	✓			
	R0.50	+/-0.030	.50	✓			
	122.70	+/-0.060	122.690	✓			

Measured by:	[signature]	Audited by:	[signature]	Prototype Approval:	N/A
Date:	07/07/10	Date:	07/07/13	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.01.17	New Issue (P/O D350-748-201)	KJ/JLM	

DART

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D350-748-241 REV. D SHEET 1 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI AFT) SCALE NTS

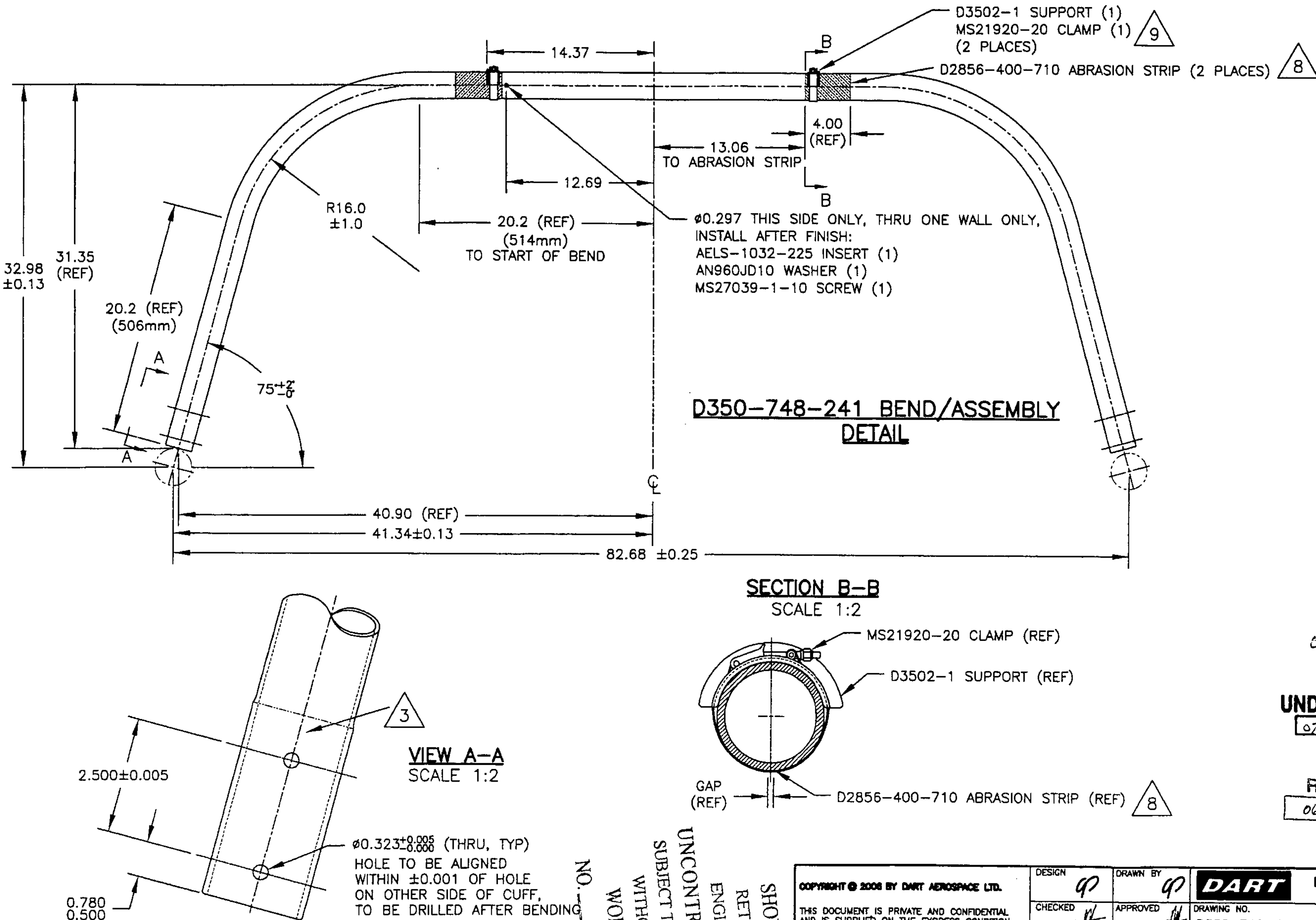
A	06.03.31	NEW ISSUE
B	06.06.30	ADD D6018-125 & PRIME AND PAINT
C	06.08.14	ADD CAD PLATING
D	06.10.31	MAG. PARTICLE AND CAD PLATE AS MFD.

RELEASED
06.10.31

QTY	P/N	DESCRIPTION
X	**D350-748-241**	**CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)**
1	D6018-125	CROSSTUBE (OR D6015-125)
2	D3502-1	SUPPORT
2	D2856-400-710	ABRASION STRIP
1	AELS-1032-225	INSERT
1	AN960JD10	WASHER
2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
1	MS27039-1-10	SCREW

D350-748-141 CROSSTUBE:

1) MATERIAL: MANUFACTURED FROM D6018-125 OR D6015-125
   FINISHED LENGTH = 122.70±0.06
2) MACHINE PER MACHINING DETAIL ON PAGE 3. BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALY, TRANSITIONS SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
3) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
4) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
5) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING
6) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
   CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
   PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
   PAINT OUTSIDE PER DART QSI 005 4.2
7) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
8) INSTALL D2856-400-710 ABRASION STRIP WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
9) TORQUE MS21920-20 CLAMPS 60 TO 80 IN-LB
10) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
11) ALL DIMENSIONS ARE IN INCHES
12) PART IS SYMMETRIC ABOUT CENTERLINE EXCEPT FOR Ø0.297 HOLE.



07.04.18

UNDER REVIEW
07.12.16

RELEASED
06.10.31

NO. ____

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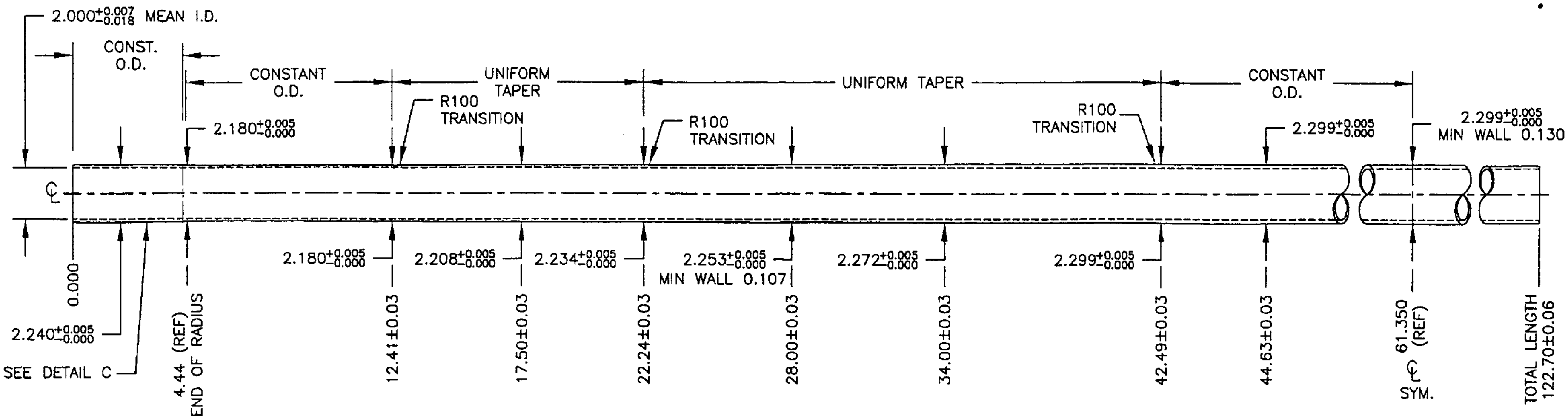
WORK ORDER

DESIGN	DRAWN BY	DART — DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D350-748-241 — REV. D — SHEET 2 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI AFT) — SCALE 1:8

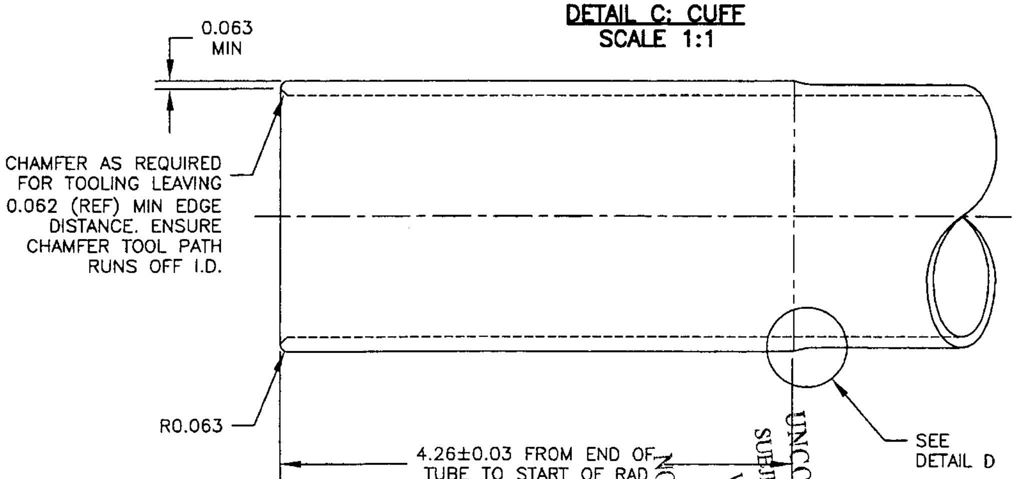


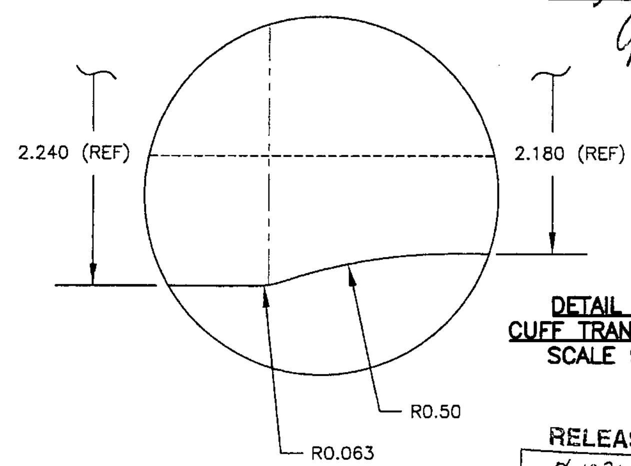
D350–748–241 MACHINING DETAIL

UNDER REVIEW 07.02.16

07.02.18

DETAIL C: CUFF
SCALE 1:1





DETAIL D: CUFF TRANSITION
SCALE 9:1

RELEASED 06.10.31

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WORK ORDER NO.

DESIGN	DRAWN BY	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D350–748–241 REV. D SHEET 3 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI AFT) SCALE 1:4

VAC AERO
INTERNATIONAL INC.

PACKING SLIP

OAK 89868-1

08/22/2007
MM / DD / YYYY

PAGE : 1

[X] HEAD OFFICE
1371 SPEERS ROAD, OAKVILLE, ONTARIO
CANADA L6L 2X5
TEL: (905) 827-4171 FAX: (905) 827-7489

[ ] QUEBEC DIVISION
7450 RUE VÉRITÉ STREET, ST. LAURENT, QUÉBEC
CANADA H4S 1C5
TEL: (514) 334-4240 FAX: (514) 334-6269

GST No. : R105468102

1DAR01

BILL TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

K6A 1K7

SHIP TO : DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
08/22/2007		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
00004289		COD

LN	PART NO	DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	B/O QTY
01	D350-748	-141/241	EA	10	10	0
	Process Specifications: Procedure: 4353 HEAT TREATED TO 180 KSI PER AMS 2759-1C 100% HARDNESS CHECKED AS PER ASTM E-18 HRC 40-45 MATERIAL : 4130 SAND BLASTED 1 PIECE P/N D350748141 B32157, 1 PIECE P/N D350748241 B32161 1 PIECE P/N D350748141 B32153, 1 PIECE P/N D350748241 B32160 1 PIECE P/N D350748141 B32155, 1 PIECE P/N D350748241 B32159 1 PIECE P/N D350748141 B32154, 1 PIECE P/N D350748241 B32162 1 PIECE P/N D350748141 B32156, 1 PIECE P/N D350748241 B32158					
02	MC	MINIMUM CHARGE 375 LBS @ $2.26/LB		1	1	0
03	GB	GRIT BLASTING		1	1	0

No claims for shortage in weight or count will be entertained, unless presented within 5 working days after receipt of materials by customer.

VAC AERO
INTERNATIONAL INC.

RELEASE NOT

GST No. : R105468102

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[ ] 2009 WYECROFT ROAD, UNIT B
OAKVILLE, ONTARIO
CANADA L6I 6J4
TEL: (905) 827-7377 FAX: (905) 827-1380

[ ] QUEBEC DIVISION
7450 RUE VÉRITÉ STREET, ST. LAURENT, QUÉBEC
CANADA H4S 1C5
TEL: (514) 334-4240 FAX: (514) 334-6269

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K6A 1K7

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HAWKESBURY, ON
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DATE SHIPPED	SHIP VIA	F.O.B.
08/22/2007		ORIGIN
CUSTOMER P/O No.	**JOB No.**	**TERMS**
00004289		COD

PART No.	DESCRIPTION	UOM	QTY ORD	QTY SHPD	TEST RESULTS
D350-748	-141/241	EA	10	10	

Process Specifications: Procedure: 4353
HEAT TREATED TO 180 KSI PER AMS 2759-1C
100% HARDNESS CHECKED AS PER ASTM E-18
HRC 40-45
MATERIAL: 4130

SAND BLASTED

1 PIECE P/N D350748141 B32157, 1 PIECE P/N D350748241 B32161
1 PIECE P/N D350748141 B32153, 1 PIECE P/N D350748241 B32160
1 PIECE P/N D350748141 B32155, 1 PIECE P/N D350748241 B32159
1 PIECE P/N D350748141 B32154, 1 PIECE P/N D350748241 B32162
1 PIECE P/N D350748141 B32156, 1 PIECE P/N D350748241 B32158

100% HARDNESS TESTED
10 pcs.
42/43 HRC

V.A.I.O. TH. 25 Q.C.

I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC.

V.A.I.O. TH. 25 Q.C.

Authorized Q.C. Inspector

CERTIFICATE OF CONFORMANCE

CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1

DATE: Oct-31-2007

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 70677
INVOICE #: 36541

CONTRACT OR
PURCHASE ORDER # PO4787

DESCRIPTION: SKID QTY 3

P/N # D350748241 S/N # B3216

CADMIUM PLATE IAW AMS-QQ-P-416 REV. B TYPE 2 CLASS 1. MPI IAW ASTM-E-1444. BAKE HEAT CHART #8407 & #8431.

CERTIFCATE: I certify that the items indicated here on have been inspected and tested and conform to all specifications and requirements detailed on the contract or purchase order.

Approved Inspector: ______________

VAC AERO INTERNATIONAL INC.

PACKING SLIP

OAK 89868-1

08/22/2007
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01	D350-748	-141/241	EA	10	10	0
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02	MC	MINIMUM CHARGE 375 LBS @ $2.26/LB		1	1	0
03	GB	GRIT BLASTING		1	1	0

No claims for shortage in weight or count will be entertained, unless presented within 5 working days after receipt of materials by customer.

VAC AERO INTERNATIONAL INC.

RELEASE NOT

GST No. : R105468102

OAK 89868-1

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CUSTOMER P/O No.	**JOB No.**	**TERMS**
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1 PIECE P/N D350748141 B32156, 1 PIECE P/N D350748241 B32158

100% HARDNESS TESTED
10 pcs.
42/43 HRC

AR (V.A.I.O. TH. 25 Q.C.)

I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC.

Laura Robinson (V.A.I.O. TH. 25 Q.C.)
Authorized Q.C. Inspector

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